



Evaluation of the Space Weather Follow-On Program's Progress in Preparing the SWFO-L1 Satellite for Launch and Operations

Evaluation Report OIG-26-008-I

March 5, 2026

➤ **What We Audited** | Our objective was to assess the Space Weather Follow-On (SWFO) program's progress in preparing the SWFO Lagrange point 1 (L1) satellite for launch and operations.

➤ **Why This Matters** | The National Oceanic and Atmospheric Administration's (NOAA's) National Environmental Satellite, Data, and Information Service (NESDIS) operates satellites that observe space weather. Space weather data, including solar wind measurements and coronal mass ejection (CME) imagery, is critical for NOAA to provide warnings for events that could disrupt communication and navigation systems, like the Global Positioning System, and severely affect commercial power grids.

NESDIS's Office of Space Weather Observations SWFO program is designed to meet NOAA's need for operational solar wind measurements and CME imagery. The program launched its SWFO-L1 satellite on September 24, 2025, and it will orbit the Sun at the Sun-Earth L1, approximately 1 million miles from Earth. This satellite will be able to continuously observe the Sun and space environment outside of Earth's atmospheric effects and will provide measurements of the flow of solar particles before they reach Earth. Sudden increases in solar wind density, speed, and magnetic field strength at the L1 orbit location can indicate the arrival of a CME, and capturing this data can provide up to 60 minutes advanced warning of geomagnetic storm effects on Earth.

➤ **What We Found** | We found that the SWFO program made adequate progress in preparing for launch and operations. However, we also found that the SWFO Program Office did not conduct vibration testing using the actual flight separation system, nor did it receive a formal waiver for this deviation from "Test-As-You-Fly" standards. Further, we identified several observations that highlight areas of concern and opportunities for improvement within the SWFO program and its support of NOAA missions.

➤ **What We Recommend** | We made seven recommendations to NOAA to help decrease the risk of launch failure, prevent unnecessary spending on future rideshare missions, minimize the recurrence of errors in future programs, and avoid potential gaps in space weather data availability. NOAA concurred with our recommendations and is working to implement them.